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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/614,895	07/09/2003	Kimihiko Sato	01-442	8423

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EXAMINER	
DWIVEDI, VIKANSHA S	

ART UNIT	PAPER NUMBER
3746	

DATE MAILED: 03/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/614,895	SATO ET AL.	
	Examiner	Art Unit	
	Vikansha S. Dwivedi	3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01/12/2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Applicant's arguments with respect to claim 1-18 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's amendments of January 12, 2006 have overcome the previous 112 rejection.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 1-5 and 9-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ban et al. (US Patent number 6,230,507 B1) in view of Kawaguchi et al. (US patent number 6,250,891) and/or Ota et al. (US patent application publication number US 2001/0027658).

Ban et al. teaches a control device in a hybrid compressor that is within a refrigerating circuit (Column 1, lines 64-66) and driven by one of an engine (3, Figure 3) and an electric motor (4, Figure 3), the hybrid compressor includes a compression mechanism that is driven by rotation of a swash plate (19, Figure 1), and an inclination angle of the swash plate is varied by a capacity controller (51) that is externally controlled (51,

Figure 3, also shown in step 3 i.e. S3 and discussed in text as follows: Column 6, lines 20-22), the control device comprising a controller (51) for operating the hybrid compressor; wherein a control device further comprises of a pressure detector for detecting refrigerant pressure in a higher portion of the refrigerating circuit. The control device comprising: a pressure detector for detecting refrigerant pressure in a higher portion of the refrigerating circuit (It is shown in the flowchart that is Figure 4(a) and it is step S11 of the flow chart of Ban et al.), wherein the first revolution number varies according to the refrigerant pressure detected by the pressure detector; wherein the controller means operates the hybrid compressor based on the first control value for a certain period (Page 8, lines 48 – 52 of ban et al.) after the hybrid compressor starts being driven by the electric motor. Ban et al. does not disclose the capacity controller at a first control value to trigger the swash plate to be rapidly inclined when the hybrid compressor starts being driven by the electric motor, wherein the first control value is greater than the second control value. Kawaguchi discloses a controller (A controller for controlling the inclination of the swash plate) at a first control value to trigger the swash plate to be rapidly inclined (Column 6, lines 32-35), wherein the first control value is greater than the second control value (Pressure) (Column 6, lines 28-30). At the time of invention it would have been obvious to one of ordinary skill in the art to have capacity controller at a first control value to trigger the swash plate to be rapidly inclined when the hybrid compressor starts being driven by the electric motor, wherein the first control value is greater than the second control value for the advantages as disclosed by Kawaguchi (Column 6, line 54 onwards). Ota et al. discloses a controller (A controller

for controlling the inclination of the swash plate) at a first control value to trigger the swash plate to be rapidly inclined (Column 6, lines 32-35), wherein the first control value is greater than the second control value. Ota et al. also discloses a pressure sensor inclination, the pressure sensor is installed within the refrigeration circuit. The term "rapid" used in the claim language has not been given significant patentable weight, as it does not have any standard for comparison. At the time of invention it would have been obvious to one of ordinary skill in the art to place a pressure sensor and 1st control value greater than the 2nd control value to control the rotation speed of the motor of Ban et al., as taught by Ota et al. so that the displacement of the compression mechanism will correspond to the pressure load. Alternatively, it would have been obvious to one of ordinary skill in the art to employ a pressure sensor with the Ban/Kawaguchi combination to promptly restore the displacement. Kawaguchi also gives a detailed description on the advantages of the present embodiment (Column 6, last paragraph onwards).

Claim 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ban et al. (US Patent number 6,230,507 B1) in view of Kawaguchi et al. (US patent number 6,250,891) and/or Ota et al. (US patent application publication number US 2001/002768) as applied above, and further in view of Takano et al. (US Patent number 5,867,996).

Ban et al does not teach the placement of detectors inside the refrigeration cycle. The control device further comprising a revolution number detector for detecting a number of

revolutions of the electric motor (Takano et al. discloses a vehicle speed sensor (Part 24, figure 1), which is same as the revolution sensor that is the motor speed in rpm), wherein the controller operates the hybrid compressor until the revolution number detector detects a certain decrease in the number of revolutions of the electric motor, after the hybrid compressor starts being driven by the electric motor. The control device further comprising an electric current detector for detecting an electric current of the electric motor, wherein the controller operates the hybrid compressor until the electric current detector detects a given decrease in the electric current of the electric motor, after the hybrid compressor starts being driven by the electric motor. At the time of invention it would have been obvious to one of ordinary skill in the art to have the engine at a certain speed to switch it to electric motor. With regard to claim 7, Ban et al. discloses an electric current detector (57, figure 3), but it is not within the refrigerating circuit. Takano discloses various sensors placed within the refrigerating circuit. At the time of invention it would have been obvious to one of ordinary skill in the art to have the current detector within the refrigerating circuit to detect the electric current accurately to facilitate the switch over from the engine to the motor. With regard to claim 8, Takano discloses a temperature sensor (26) that detects the air temperature that has passed through the evaporator (14) (Page 2, lines 60 – 62). At the time of invention it would have been obvious to one of ordinary skill in the art to place a temperature sensor to detect the air temperature that has passed through the evaporator to control the capacity change of the air that has passed through the compressor.

Response to Amendment

The applicant has significantly changed scope of the Claims. For example, "first controlling means for operating the hybrid compressor by setting the capacity controlling means to a first control value to thereby trigger the swash plate to be rapidly inclined when the hybrid compressor starts being driven by the electric motor; and second controlling means for operating the hybrid compressor by setting the capacity controlling means to a second control value after the first controlling means operates the hybrid compressor, wherein the first control value is greater than the second control value that is obtained from a status of the refrigerating cycle" has been amended to "a controller for operating the hybrid compressor by setting the controller to a first control value to trigger the swash plate to be rapidly inclined when the hybrid compressor starts being driven by the electric motor and for operating the hybrid compressor by setting the controller to a second control value after the controller operates the hybrid compressor based on the first control value, wherein the first control value is greater than the second control value that is obtained from a status of the refrigerating cycle." Changes in scope include a single controller setting the first and second control value and the status control value being obtained from a status of the refrigerating circuit. Consequently, the amendment necessitated the new grounds of rejection above.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vikansha S. Dwivedi whose telephone number is 571-272-7834. The examiner can normally be reached on M-F, 8-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy S. Thorpe can be reached on 571-272-4444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

VSD

TAE JUN KIM
PRIMARY EXAMINER